

**Water Quality Standards Advisory Committee
Meeting Minutes**

April 8, 2003

Members Present:

Wendell Berry	NH Lakes Association
Donna Hanscom	NH Water Pollution Control Association
John Hodsdon	NH Farm Bureau
Vernon Lang	US Fish and Wildlife Service
David Miller	NH Water Works Association
Carl Paulsen	NH Rivers Council
Marjory Swope	NH Association of Conservation Commission

Members Absent:

William Beckwith	US Environmental Protection Agency
Steve Clifton	Consulting Engineers of NH
Michael Donahue	Business and Industry Association of NH
John Dreisig	NH Public Health – Risk Assessment
Tim Fortier	NH Travel Council
Ben Frost	NH Office of State Planning
Nancy Girard	Conservation Law Foundation
Ken Kimball	Appalachian Mountain Club
Bill McDowell	University of New Hampshire
Eileen Miller	NH Association of Conservation Districts
Peter Rice	NH Municipal Association
Jasen Stock	NH Timberland Owners Association

Others Present:

Philip H. Bilodeau	City of Concord
Neil Cheseldine	Wright-Pierce
Chip Chesley	City of Concord
William Daly	Salem Water Works
James Donison	Town of Jaffrey
Jim Fitch	Woodard & Curran
Richard Hannon	Canobie Lake Protective Association
William Heinz	Granite State Hydropower Association
Vic Krea	Wright-Pierce
Ronald Rayner	Environmental consultant/BIA member
Andrew Serell	Rath, Young & Pignatelli
William Schroeder	Canobie Lake Protective Association
Anthony Zuena	SEA Consultants, Inc.

DES Staff Present:

Paul Carrier	Admr., Watershed Management Bureau
Bob Estabrook	Watershed Management Bureau
Gregg Comstock	Watershed Management Bureau
Marie LosKamp	Exec. Secretary, Watershed Management Bureau
George Berlandi	Wastewater Engineering Bureau

Introductions/March 11, 2003 Minutes

Marjory Swope, Chairperson, called the meeting to order, began with introductions, and then requested the committee's approval of the 03/11/03 minutes:

Motion made by Vern Lang to amend minutes of March 11, 2003 with minor corrections.

Donna Hanscom moved to accept the minutes of March 11, 2003 as amended, David Miller seconded the motion and the vote was unanimous.

WATER TRANSFERS/ANTIDEGRADATION – Paul Currier

The draft rule change language, which is a single page handout with annotations of the existing rules, and you also have two comments that we received one from Vern Lang and from Dave Miller. Some of the comments have been incorporated. I guess specifically in response to Vern's comments, the change from last time, and on the first page cross out the first line which says: *Repeal Section Env-Ws 1708.12, effective 12-10-99*, because as a result of Vern's comments, rather than repealing that entire section, what we would like to do is to retain the section, rename it Transfer of Water, and amend it to keep the provision that biological characteristics of the source water shall be compatible with those of the receiving water. We also struck the word, in response to comments, moving up from the bottom of the page to the middle of the page, it used to read: *all point sources containing phosphorus to lakes or ponds*, and we took out the words: *containing phosphorus*. So that provision would make all point source discharges to lakes or ponds significant for the purposes of antidegradation review. No matter what the issue is or what the constituents of the discharge are. In response to Dave's comments, we recognize that we had not done sufficient work to notify public water suppliers and we give them a chance to first of all understand what is going on, and participate in it, so **we propose to send out a letter to public water suppliers that currently transfer water or that we know are considering transfers**. Basically send them an information package and give them a chance to participate and add their point of view toward it. Two other things that have occurred to us in this process would be: 1) If it is mutually agreeable, it might be worthwhile for DES to facilitate, and again we are not in a position of being for or against reclassification of waterbodies, a legislative proposal for reclassification where that is a piece of the water transfer process. We would offer that and discuss that with the public water suppliers to whom that apply as time goes on. 2) We have talked informally with the EPA permit folks and our understanding of the permits process here would be that once we have the rules changed, and the reclassifications done (whether there are existing water transfers), the completion of the NPDES permit application process would be sufficient and then the ball would be in EPA's court and where there is an existing transfer, that would cover it until EPA gets around to issuing the permit. That is unofficial, but that is what we think the situation will be once we have the rules changed and any reclassifications done. Any questions, other comments, or feedback?

Question: Vern Lang – A question occurred to me, the issue is when do you start the clock? Some of these water transfers have been going on, something that started in 1980, subsequent to the Clean Water Act, when do you measure portions of the biological criteria, what the baseline in the receiving water would be, do you try to identify what it would have been before the water transfer occurred, or do you make that determination based on what is in that reservoir now. Theoretically one would assume that this was an illegal discharge based on the baseline before the discharge occurred.

Answer: Paul – I don't think that is the way we would approach it. I haven't thought about it in detail, but would not propose to do antidegradation reviews for existing discharges. All the discharges that exist, as far as we know, were presumed to be legal and in accordance with laws, rules and regulations at the time that they were initiated. So the process there would be to proceed with reclassification if necessary and permitting. With those two vehicles, there would be adequate opportunity for public discussion of the issues associated with those existing discharges. The idea being that antidegradation review in general is a forward-looking process. It applies to something that an applicant proposes and that is the way our rules are written. I think our opinion would be that all the ones that exist are in fact legal. They were undertaken, whenever they were started, with an understanding by whoever is doing the transfer that they were legal and in accordance with whatever was in place at the time.

Comment: Marjory – Open up for permits?

Answer: Paul – The requirement for a permit is the result of the Loon Mountain decision. A judge saying that permits are required and the fact that action has not been taken to put those permits in place is just due to the fact that administrative machinery turns slowly.

Comment: Bill Schroeder – Another way of looking at that would be that if a permit were issued, by the standards they have to be reviewed every 5 years.

Answer: Paul – Right.

Comment: Bill – I would assume that review would involve antidegradation types of considerations. In other words, okay lets propose hypothetically that you permitted something and then 5 years down the line, it is time for a review. I would think it would be appropriate to look at whatever is being introduced into the water and assimilative capacity to the waterbody and have an antidegradation review. It might be insignificant, or might be significant depending, and if that is true then why wouldn't you apply that process to an existing discharge, which is now going to get a permit for the first time because permits didn't exist, when this began.

Answer: Paul – Antidegradation review applies to new or increased. So, to the extent that upon renewal there is a proposal of an existing transfer, there is a proposal for an increase, there would be an antidegradation review on the increase.

Comment: Bill - If a use is an existing use, and we are not talking about increasing the volume, then you could not be subject to any kind of an antidegradation review going forward even if conditions change and water quality is staying negatively impacted because it was okay once?

Answer: Paul – Right, the review is a forwarding looking process. The review takes place before the discharge starts and predicts the impacts of the discharge, the degradation of water quality and then makes a judgment on that relative to social and economic benefits.

Comment: Bill – What I am saying is that troubles me. Let me try to explain why I am troubled and see if anyone else agrees with that. Suppose that you had a hypothetical case of somebody applying for a permit to transfer and you went through a review and said okay, based on the assimilative capacity of this waterbody that it is going into and what you are going to transfer, it is okay. You are granted a permit to do this. Suppose 5 or 10 years down the line things have changed and now the assimilative capacity of the receiving water isn't so good any more and now you really ought to consider that we shouldn't allow this water transfer to happen anymore, at least not the way it was. What I am hearing is that we wouldn't consider that because even though the projections that we made might have been made in good faith five years ago or ten years ago, we wouldn't re-review that if facts showed that it is not working out the way we projected.

Answer: Paul – I think, correct me if I am wrong George, if the facts did show that, that is the predictions on which the permit was granted and the discharge was allowed were incorrect and that reality was not tracking the predictions and then there would be opportunity to review that in the context of the permit renewal and place additional requirements for treatment say on the transfer of the discharge. That would be the case in any NPDES permits renewal.

Answer: George – Just because there is not going to be an antidegradation review doesn't mean we don't review the permit application. When we have many facilities that reapply with the same load in and flow that they had in the existing permit, that doesn't mean we don't go through a review looking at the water quality standards the way they are now versus the way they might have been when the permit was issued. We still do a review. We just don't underline an antidegradation review.

Question: What standards do you apply?

Answer: George – Water Quality Standards

Comment: Paul – *Let us give that more thought because Water Quality Standards as you know include the narrative and numerical standards as well as an antidegradation policy and designated uses.* You're right that there should be a review of water quality relative to those standards upon permit renewal. I am not sure what we would do in the case where you had a declining water quality trend. It may still meet standards. As a matter of fact for most lakes and ponds, New Hampshire water quality is well above standards, but you may have a declining trend. You would expect if you had done an antidegradation review and you had allowed a transfer and the prediction is that water quality is going to go down because

of this transfer but it is okay because we have the social and economical justification, there would be an estimate of the magnitude of that decline. What you are saying, if that is wrong and magnitude is greater, then there should be a process where by we would go through and require an adjustment. **We will get back to you on what the details would be.**

Question: Jim Fitch – Permits that will be granted will they have limits and monitoring requirements in your mind?

Answer: Paul – Yes

Question: Jim Fitch – So isn't that then a vehicle, you will need to then every time you review permits, review those limits and monitoring requirements in the context of the water quality standards and if the trend is defined initially so that there is an estimate or anticipated trend included in the permit then that becomes also something that you could compare against?

Answer: Paul – That is true hypothetically. I think the issue is we have not in general considered trends in doing permits. That is new territory for us. Quantifying trends and then considering them in light of the inherent variability of environmental systems is something that is not as straightforward as it sounds.

Comment: Jim Fitch – I think the precedent is there, though, in the wastewater permits that are issued. You maintain an increased focus on the waterbodies; and if you see changes that are undesirable, you address it through the permit process.

Question: Anthony Zuena – On the issue relating to the nutrient section, which applies to subsections (b) and (c) and the specific question is this, does a detention basin for purposes of site runoff controls fall into the category of point source? I looked at the definition and it is not there.

Answer: Paul – It is not there. I guess I will put that in the category of **we will get back to you, that is what is a point source and what is not a point source.**

Question: Anthony Zuena – Specifically as it relates to detention basins because under (c) it says to lakes, ponds or tributaries. I could envision a detention basin some distance away from a waterbody that had a pipe outlet to a stream and then into a lake or pond and a strict reading of this as it is currently scripted, I think would prohibit that.

Answer: Paul – We need to think more about it but I think the way it is written now looking at (b) and (c) of 1703.14 Nutrients, (b) would prohibit the direct discharge of a detention basin to a lake or pond. I think if you read (c) that detention pond is a discharge. It could be allowed back up in the watershed provided we made the determination, if it was new, that it would not contribute to cultural eutrophication, so it would be allowed in the tributaries. I think that same reasoning applies to any increase non-point source discharge whether or not it has a defined outlet. It could be allowed in the tributaries but not directly to the pond.

Comment: Anthony Zuena – Is that an answer or are you going to think about it more?

Answer: Paul – **We will think about it some more and confirm that.**

Question: Anthony Zuena – I may be slow on the uptake but after having read the meeting minutes, I venture to say I am not the only one, but I still don't understand the fundamental issue of why Class A needs to be downgraded to Class B. The only thing I can come up with is this issue of human influence. Again I have a very specific situation in mind where Arlington Pond is a public water supply by every definition and test. Why isn't it feasible to reclassify Arlington Pond to Class A as opposed to declassify it or downgrade Canobie from an "A" to "B"? I just don't see it in the regulations that force them to do that.

Answer: Paul – It is an interpretation admittedly. The interpretation of the terms *naturally occurring* or *as naturally occurs* means that by definition you do not have a pipe discharging anything to that waterbody because anything that is discharged is not *as naturally occurs*. The limitation on Class A for a variety of parameters is *as naturally occurs*. Whatever the classification of Arlington Pond, there could not be a pipe discharging to Canobie Lake because that would **not** be *as naturally occurs*.

Comment: Anthony Zuena – The problem is not even so much changing one class to another, it is the need to go through a legislative step as Step 1. I just see that mechanism as a fatal flaw. I just don't see a legislator taking that on before the rest of the process is laid out with antidegradation review, and possibly social and economic review. It will never get that far because you will not get past Step 1.

Answer: Paul – I think we can. I don't think there is another interpretation of *as naturally occurs* that fits with the definition of *naturally occurring* in the rules that can be made that would allow a discharge to occur to a Class A waterbody or anything.

Comment: Anthony -But fundamentally it is going on right now by virtue of the fact that Arlington Pond is a drinking water supply and I think we all agreed at the last meeting the issue of A or B has really nothing to do with science, it is just an historical designation.

Answer: Paul – Well it is, but the Class A does have that *as naturally occurs* provision, which is protective. It provides that the water quality has to be as naturally occurs for a variety of parameters. That is protective. That means you cannot create a discharge to it. I think, and again this is subject to discussion, what we want to do at DES is to maintain that protection. We want to maintain for Class A waterbodies the *as naturally occurs* provisions so that there cannot be discharges to Class A waterbodies.

Action item: Revisit need for reclassification – can DES change Env-Ws 1703.08-14 to remove the “as naturally occurs” requirement for class A waters ?

NOTE: *This is a slight digression but this is a map of where we think the Class A waterbodies are in the state. This is based on research of the legislative history of classifications and I would like you to look at it at the end of the meeting when you have an opportunity.*

One of the legislative intents, we think, of Class A was certainly to prevent discharges of sewerage or waste but to prevent discharges in general; and we want to maintain that.

Comment: Bill Schroeder –You characterize the discussion last time, as: I think we all agreed as whether a lake is Class A or Class B as sort of an historical accident or words to that effect, and I don't think we all agreed to that. I don't. There may have been various reasons why various lakes were named. I think that is not the point. I think in the regulations now lakes are classified as either Class A or Class B. There is difference in the regulations as to what the intent of those things are and as I said last time, I think if we are going to contemplate transferring water into a Class A lake, it needs to be reclassified as Class B and the legislature needs to consciously say that this lake no longer needs to be considered in that category of something that is maintained as close to natural as possible. I think that was a public decision that was made and it needs to be a very public unmaking if it is going to happen.

Comment: Anthony – I want to blink back to my first comment in terms of detention basins, any Class A waterbody, if in fact it is considered a point source, one could argue then that there can never be any more development in a Class A watershed that ends with some sort of detention basin without that sort of petition.

Answer: Paul – I think the wording would allow detention basins on the tributaries to a Class A lake. The present wording allows development in a Class A watershed. If you want to really, strictly apply *as naturally occurs* everybody would have to move out of Class A watersheds and they would need to be reforested with virgin forests. Obviously we don't want to go in that direction. So, we leave the *as naturally occurs*, which prohibits the point source discharges directly to the waterbody and we use other things to control the growth of non-point sources in the watershed. There is a lot of fuzzy thinking there, I fully acknowledge that and it needs to be worked on some more.

Action item: Refine the definition of “as naturally occurs” Does it include any human influence, and if so, how much – in the watershed? Atmospheric deposition?

Comment: Ron Rayner – To clarify this, and going back a couple of steps, taking Concord as an example or any municipality that this has been an existing practice. By the emphasis on new and increased, if they were able to continue or they so chose to continue the discharge at past flows and obviously it is existing so that precludes new and they are not going to increase the flow to above where it has been in the past, their obligation lies with filing for the NHDES permit application, but antidegradation review would not be triggered. Is that correct?

Answer: Paul – Right.

Comment: Ron Rayner – That is the difficulty area relative to all of the signs for waterbody assessment and the social and economic development, etc.

Answer: Paul – Right and our thought would be that antidegradation review is only triggered by a proposal for something new, new or increased and that is what the language of the rules says. I guess the

thought being, and this is my own idea, there is precedent for that kind of approach. We do that in applying water quality standards to impoundments where the dam exists. We don't require removal of dams for review relative to the condition prior to the dam existing.

Question: Tony Zuena - With the 11 or so existing transfers that are occurring, do you envision issuing an administrative order or some directive that says within this period of time the process needs to be reviewed?

Answer: Paul - No

Question: Tony - So what would trigger?

Answer: Paul - I think we will work with the public water suppliers and so we will trigger it. The idea is that the process will move along. Hypothetically, looking way into the future, we have a public water supply that says I am not going to get a permit, I am not going to reclassify and I am just going to continue. Well, sooner or later we will probably exert some pressure on them, but we will deal with that if and when it happens.

Comment: Marjory - May I say that the way I read your proposed (a), (b) and (c) after 14 is that if you have, regardless of what you call it, a detention basin, if the discharge from the detention basin is into a tributary it doesn't matter what you call it because the only thing that is prohibited is point source discharge of phosphorus into lakes or ponds, and (c) says there shall be no new or increased discharge. Which means nonpoint source as well as point source, so it doesn't make an iota of difference what you call your detention basin. Whether it is point source or nonpoint source, because if it is not a point source it would be a nonpoint source and that would be covered under (c) anyhow.

Answer: Paul - Yes.

Comment: Tony Zuena - I am trying to make sense out of Marjory's point. I guess it comes down to the tail end of that sentence which would then theoretically require some sort of an analysis of whether or not it contributed to cultural eutrophication for every detention basin that was proposed within that tributary to a lake or pond.

Answer: Paul - Right, and that analysis would be in the context, most likely, of antidegradation review.

Comment: Ron Rayner: My guess also, Paul, is that although I understand you are trying to be somewhat accommodating here and perhaps saying earlier that discharge to a tributary may not be considered a point source, I think Bill Beckwith might disagree with you.

Answer: Paul - No, it is a point source, but there is some ambiguity in what is a point source or not relative to stormwater.

Comment: Marjory - I would really want what was written.

Comment: Paul - Discharges can occur to the tributaries of lakes or ponds provided they don't contribute to cultural eutrophication. Then we have to make the judgment of whether or not they contribute to cultural eutrophication. There is no permit issued for detention ponds. It is a stormwater BMP.

Comment: Bill Schroeder - Vern had suggested that this 1703.14 (a) and (b) where you are striking out (a) and rewording (b), I think in his comments he said he didn't think there was good cause to delete those and I thought he made some good arguments. Why not leave as it is written. Class A waters will contain no phosphorus or nitrogen unless naturally occurring. You have the same kind of language for a lot of other things for Class A and you have already said that if you want to transfer water into a body it has to be Class B. So this doesn't prevent you from doing that.

Answer: Paul - You may have a good point. Any further discussion on that? I think that at this point would tend to agree. Since we have a variety of other parameters with essentially the same wording, which we are not changing. We are saying that a reclassification is required anyway in order to do a transfer. We could keep the naturally occurring clause for nitrogen and phosphorus as we are keeping for the other parameters. I think I would continue for what is now (a) continue to strike out the Class B since if we replace the words Class B with surface waters that makes it more inclusive rather than less.

Comment: Bill Schroeder - I guess I would agree with that comment. It disturbs the poetry of it a little bit. You have some of the other sections, Class A waters shall and Class B waters shall.

Question: Marjory - Paul, so it was to leave the existing (a).

Answer: Bill Schroeder – The revised proposal is leave (a) as it is. **Paul** – Don't delete anything. **Bill** – Class A waters shall contain no phosphorus or nitrogen unless naturally occurring.

Question: Marjory – And then renumber these to be (b), (c) and (d). **Answer: Bill** – Right.

Answer: Paul – And then the issue is whether we retain the words Class B in the following paragraph or whether we change it to surface waters.

Comment: Donna Hanscom – Since you are going to reinstate that paragraph, perhaps you should say **container of technical responses** for nitrogen.

Answer: Paul – Actually those words occur in several places. The requirement is that if it is there it be naturally occurring.

Comment: Ron Rayner – Donna has a good point, this got onto the discussion last time, and I questioned you about containing phosphorus. Although I didn't reference or ask about methodology, it raises the whole issue of MDLs, what limits are we going to establish for, not to get that far off track, but there be some limit by which it is going to be reasonably sure that it is present, below this level it is not a concern, analytically you get into accuracy situations.

Answer: Paul – The issue here is whether it is naturally occurring. **We recognize that we need some refinement in how we apply the definition of naturally occurring. That is where we would put our work.** The issue is not whether there is phosphorus or nitrogen present, but the issue is the source of the phosphorus or nitrogen whether it is naturally occurring or not. That is where we would refine the thinking process.

Comment: Marjory – Why wouldn't you leave Class B.

Answer: Paul – We could. As Bill said, if we leave Class B, it is a direct parallel, I believe, with the other provisions: turbidity, color, etc. So maybe we would leave Class B.

Comment: Marjory – So essentially we would leave that as it which is essentially Class B instead of surface here.

Answer: Paul – Right.

Comment: Marjory – And there isn't anything wrong with the Class B.

Comment: Bill Schroeder – The ones immediately preceding that are for color, turbidity, temperature, etc.

Comment: Marjory – And if we have already singled out Class A, then there is no difference between Class B and all others.

Question: John Hodsdon – Are you going to consider that nitrogen that comes from the west coast plants as naturally occurring?

Answer: Paul – We don't know. In general my opinion, we haven't fully thought about it, the answer is "no". Atmospheric deposition resulting from anthropogenic sources is not naturally occurring.

Question: Marjory – What does that do in terms of your water quality? **Answer: Paul** – It means that we have a violation, especially in Class A waterbodies, for pH for nitrogen and so on. That doesn't change the situation a lot where we have lakes and ponds that are not meeting water quality standards for pH and we have attributed that to atmospheric deposition. We have a situation in which atmospheric deposition is resulting in water quality standards not being met right now regardless of where the numerical standard is not met. So, that is not fully thought out either.

Comment: Ron Rayner – I think that warrants some thought Paul on behalf of the department because as things get tighter and tighter, not only now, but down the road. We may well be looking at where are the sources of nitrogen **MA** from an atmospheric deposition. In addition to the power plants there is considerable nitrogen being put out in rainfall during a lightning storm. Lightning in and of itself creates, oxidizes nitrogen in the atmosphere and in the presence of rain will precipitate out of the atmosphere. So are we going to find out five years from now that there is some other natural occurrence that precipitates phosphorus upon us? Who knows, and then we can into how are we going to pay for this? Are we going to send our bills to the power plants in the mid-west? That has already failed us once.

Answer: Paul – The words naturally occurring are used, in the context of water quality standards, and I did a web search to try and see if anyone that listed a posting on the web had come up with a definition that you could use in a quantitative way and nobody has at least that I found with the words that I chose to

use to search things. I found two things. Lots of water quality agencies use those words and virtually none of them define it.

Comment: Ron Rayner – What your saying is that it hasn't been tested in the courts, which is what it comes down to.

Answer: Paul – I think that the definition that we use right now, which is:

Comment: David Miller: *"In the absence of human influence"*, **Paul** - is very difficult to apply. We cannot send a DES staff person out in the field to take a water quality sample, or do any other analysis out in the field, that would tell them whether nitrogen, phosphorus, turbidity, pH or so on is naturally occurring. We do not put it in a meter and it comes out with a naturally occurring portion and the other portion.

Comment: David Miller – It is a moving target anyway.

Answer: Paul – Right. We don't have any good way of dealing with that at the moment.

Comment: Marjory – Are there any other comments on this which is to be revised again?

Answer: Paul – By the way we proposed the process of revision to be exactly this, a continuing process where we iterate on it until we get words that are first of all understandable and second of all that everybody understands what they mean.

Question: Marjory – So is the *next step to send this to Water Suppliers?*

Answer: Paul – *Yes, we would propose to do that next.*

Question: Marjory – Presumably we would talk about it again, once you have heard back from the Water Suppliers?

Answer: Paul – Yes and we propose to talk to the Water Suppliers as a separate conversation from this group.

Question: Marjory – Would we then converse about your conversations with the Water Suppliers?

Answer: Paul – Yes. *We will continue to revise this page basically until we get to a proposal for a rule change that has been run by this group and that we have talked about with the Water Suppliers. Then we will start the rule making process.*

Question: Marjory – Are we on to the next topic then? I think we have pretty much covered water transfers. I am not sure that I would not rule out a wholesale reclassification by way of the Legislature especially if you went in for a bunch of different ponds for the same reason.

Answer: Paul – Right, having gone through the Legislative history, deciphering legislative language over how every many period of years, it is much better to do them all at once. Then you at least have consistent language for the group that you are doing.

Comment: Marjory – Yes, and I think there was some concern that the Legislature might not go for changing the Class but if you explain to them it is because of this situation that we hadn't realized, especially if there was a bunch of them all together. Of course, you are worried about getting Salem permitted for when this summer?

Answer: Anthony Zuena – No, that has never been the issue. The issue is coming up with a workable strategy and I still have great fear that this is not a workable solution. **Comment: Marjory** – The Legislature is certainly a group to be wary of.

Question: Chip Chesley – Paul do you have any idea on timetable to talk Legislative Initiatives and Rule Making, is there time to figure out is the horse before the cart or the cart before the horse. Certainly the conditions that are raised, Salem at one process, takes a completely different light on these rules that we are discussing. I think that is a very valid point. Critically important financial decisions not knowing you could walk out on the ice, and is the ice politically thick enough to support. I can't answer that.

Answer/Question: Paul – Right, I guess what you are suggesting is that we have the Legislative conversation first?

Answer: Chip – It does seem appropriate because it is addressing questions that have been raised.

Comment: Paul – We have no set timetable and what do other people think about that. I think you are right. The law says there shall be no discharge of any sewage or waste into waters of this classification. We have interpreted that to be there shall be no discharge of waters that have received sewage or waste. For instance the Contoocook water into Penacook Lake would not be allowed by the law.

Answer: Chip – I understand that is your interpretation of the law, but lawyers interpret the law a lot differently.

Comment: Paul – This is true. The agency does too until the lawyers come along. **Comment: Chip** – Our lawyers understand that.

Comment: Marjory – So is your suggestion that they not talk to Water Suppliers prior to the next session of the Legislature.

Comment: Paul – No that **we do the reclassification proposal first before we decide what the rule change should be.**

Comment: Chip – Yeah, I think Legislative action should perhaps come first and then the rules should follow. Certain rules here are on the presumption of legislative action.

Comment: Marjory and Paul: That is right. **Marjory** – But you are not suggesting delaying the conversation with the Water Suppliers?

Answer: Chip – No.

Comment: Paul – I think the schedule would be that if **we go ahead and have that discussion with the Water Suppliers and if everything moves along, we could in fact have a Bill for next session.**

Comment: Marjory – The filing for next session starts at the end of this month.

Answer: Paul – That is true, we could file a title or we could get someone to file a title for us.

Question: Marjory – Crank them all in altogether. Okay does everybody understand and is not wildly unhappy with that approach?

Answer: No one expressed being unhappy with this approach.

Marjory – Okay now moving onto Flow Based Permits and such and have we beaten this one to death?

DYNAMIC MODELING AND FLOW-BASED PERMITS – Paul Currier

We are actually restarting conversations on the subject, which is one of the ones we started off with a couple of years ago. We put together a new discussion paper and you have a background letter from us to Andrew Serrell which is basically a follow-up letter to the May 16th Water Quality Standards Flow Based Permit Work Group Meeting that we had. I guess I will just start off with a discussion by summarizing what is in the discussion paper, which is a proposal to change the rules in order to allow dynamic modeling for the purposes of setting limits for NPDES permits to water quality limited streams. Basically the situation is that EPA, (this is for aquatic life use criteria for both acute and chronic) has duration of exceedence criteria, statistical criteria. Basically acute criteria not being exceeded for more than one day in every three years on average and chronic criteria not being exceeded for more than 4 consecutive days in every two years on average. Those are found in the EPA Technical Support document that is not a rule but it is something that EPA promulgates and we all go by it. EPA in their guidance also provides for the use of 7Q10, which are statistical parameters. Because it flows from treatment plants, discharges, and concentrations from treatment plants, vary over time, as do flows in rivers. EPA has allowed and conventionally most permit issuers use the simplifying assumption of steady state conditions and 7Q10 and **1Q10** for certain things. Steady state conditions at design flow for the treatment plant average daily and steady state conditions in the receiving stream in 7Q10. That is in fact what is in our rules. What we are proposing is to change the rules to allow dynamic modeling. Allow predictive modeling that would consider time varying conditions for all those things, i.e., stream flow, stream concentration, plant flow, and plant concentration, in order to come up with permit limits. We would continue to allow the simplifying assumption of steady state basically for routine conditions where there was a condition that would warrant the time varying analysis. We would change the rules to allow that. Discussion.

Question: Jim Fitch – When it comes to the definition of Dynamic Modeling, I guess I will need to paint a scenario to describe where my question comes from. Based in fact that a steady state model is much easier to develop then a true Dynamic Model. So my question if there were a facility that could easily be in compliance with all but one of the criteria in the license and wanted to consider that single parameter under this Dynamic definition, could the other parameters be defined via steady state and then simply varying steady state models be defined for that one parameter rather than creating a truly Dynamic Model for all the parameters for that facility?

Answer: Paul – I guess the answer, a model scenario would be run parameter by parameter.

Comment: 6/2/03– Many of the models that are developed now are multi parameter models so that if you have the model set up, you can do a whole suite of parameters. What I am suggesting as an example is taking a parameter like copper toxicity and compliance spread equally under a steady state condition for all other parameters of concern for that facility. Parameters specific model for copper that considered these varying situations. My question is rather than making that a true Dynamic Model, could you do a steady state model for varying conditions, so that you have a nested set in steady state models because it is still simpler to do?

Answer: Paul – I think the answer is yes. That we would consider a whole variety of hybrid modeling situations that are not truly Dynamic Modeling where you have got continuous variation of all parameters. I think that is what Jaffrey is thinking in their proposals.

Comment: Jim Fitch – You could propose some numbers that would suggest for a given 7Q10, you could define the steady state model using the 7Q10 conditions and the licensed flow and flow of the facility and found that there were failures for this criteria and lets say that 7Q10 was a 100 cfs, yet 100 cfs didn't occur very frequently, you can create a model using river flow of 200 cfs and maybe the same parameters for the treatment facility or if the facility was only at 50% of the design load, you could do a model at 200 cfs at 50% of the design loads to see what concentration you could discharge without causing the water quality problem. You could do a series of these so that you could see how the license or the allowable discharge would vary with the changes in either amount of load to the facility and flow in the receiving water. What I am suggesting is instead of creating a single Dynamic Model that considers all the dynamic variations that can take place in a situation, that you create a series of steady state models for varying conditions that find a condition from a 7Q10 base model all the way up to much different discharge situations. So that the operators at the facility then would be able to understand that in the permitting process you could understand that if in fact flow was at 200 cfs and you are at 50% of the load from your treatment facility, then the load from the facility could be at this target range without a water quality problem. Whereas if your flow were to increase from your plant with the flow of the river was to decrease, then there would be various other conditions that you need to comply with. I think it is getting to the same end point as the Dynamic Model.

Comment: Paul – In my mind there are two situations that a treatment plant might have. One is the treatment plant doesn't have any storage, where the volume of the flow rate of their discharges is not under their control because of limited capacity and the other is a lagoon system. More than one system which does have off line storage and they can vary the flow rate of their discharge and you can model either one. In either case, what we would expect of a model is to be able to tell from the model that those time criteria for chronic criteria would not be exceeded more than 4 consecutive days in three years or for the acute criteria no more than one in three years. As long as the model can produce that we would have flexibility on the model that we are

generating. In the case where a treatment plant can control the flow way of its discharge, I think you could easily do a pseudo steady state model for that.

Comment: Jim Fitch – What I am suggesting is that you could do a series of models that would define the point at which you would violate water quality criteria for both acute and chronic for the varying flow conditions in the river and the varying load conditions from the treatment facility so that there were information available to the operator on a day-to-day basis and to the regulator as to what is the appropriate level of discharge for that set of conditions without creating a single dynamic model. You can do it as a series of steady state models to define that relationship.

Comment: Paul – Where they have off line storage, where they can control the discharge.

Comment: Jim – Whether they do or do not.

Comment: George Berlandi – And then you would vary the discharge versus other quantum rivers?

Comment: Jim – My suggestion is off line storing place is very similar, but if your facility that is only in their development cycle and you have historically for the last ten years of operation have not exceeded 50% of your design loads in any day, your license is still written on a 100%.

Comment: Paul – We could write a license for less than a 100%.

Comment: George – Not according to EPA.

Comment: Jim - You have to develop permanent ones based on the maximum load from the treatment facility that is permitted for 7Q10 or 1Q10 condition in the receiving water. So what I am looking at here is that situation without storage where you are traditionally today licensed under 100% of future design conditions. Yet, you are not even beginning to approach those. This creates an opportunity to define the load carrying capability of the stream under the variations noted.

Comment: Paul – I guess we would have to talk about that because there is good reasons to write the permit based on design.

Comment: Jim – I guess my point being that if a facility is faced with adding nutrition or treatment to the facility it is much cheaper to install that gauge and to coordinate with USGS outbreak managing and to calibrate that gauge on a yearly basis than it is to spend millions of dollars for something that is not creating an environmental improvement.

Comment: Paul – I think that is the general concept as you need to gauge at or near the discharge location and it would need to be a USGS quality gauge and you agreed to have a well defined control section, you would be periodically calibrated, and so on.

Comment: Andrew Serell – First, I want to thank DES for taking the time to answer my earlier comments and also for thinking through their proposal for Dynamic Modeling which on face makes a lot of sense. I haven't had the chance to think it through in detail so I think I am going to reserve the right to comment further but at first glance it makes a lot of sense. It is a step in the right direction. In the case where you actually have lagoons and slow control of storage, the suggestion would be that you could for example develop two sets of steady state equations. One which would be using 7Q10 stream flow and then some plant flow other than the plant design flow which would be controlled by the gauge and a second model which you would use the plant design flow and some higher stream flow.

Comment: Paul – I think that the idea would be that the design flow would include the off-line storage so that the varying flow from the off-line storage to the river, you have to have enough storage so that you could go through a design calculation to satisfy that at the plant design flow you had storage to be able to modulate the discharge.

Comment: Andrew – I think that is the simplest scenario that makes sense. The open question that we need to discuss further and to think about is the intermediate one, if you don't have

storage but you still have a large body of data about stream flow at the plant so that you can draw some correlations between plant and stream flow and you do again some type of two tier steady state model one with a low stream flow, 7Q10 stream flow and something less than plant design flow for the second model with higher stream flow and plant design flow and can you do that without storage and that is the question that we need to consider.

Comment: Paul – I think we would want to talk about it in detail with a specific scenario but I think in general, 7Q10 is asserted for the time criteria and you can do one or the other. You either adhere to the time criteria or you use 7Q10. You either do some type of Dynamic Model and again it doesn't have to be fully dynamic with time steps and that kind of thing, but you do something where the various flows and concentrations are varying over time in some way, and the criteria that you are going to hit there is chronic 4 consecutive days in three years and acute one day in every three years on average. You don't even consider 7Q10. You consider the varying stream flow and you consider the varying plant flow and concentrations and you have to hit the 4 days chronic and the one-day acute.

Question: Jim – Then my following question is the use of 1Q10, I think that is something new for the regulations. How do you see that, where does it come? I know in general it comes from the CSB, but you said you would use that only in the case where you are using Dynamic Modeling? **Answer: Paul** – 1Q10 **per Q**, that is a change.

Question: George – You are still using 7Q10 for the chronic? You are not eliminating 7Q10.

Answer/Question: Paul – Right. Have we run those numbers before on permits the 1Q10?

Answer: George – No. We have to talk about the 1Q10 system.

Comment: Paul – I think that is a change that is new right out of the PSP. We do not have experience with it.

Question: Vernon Lang – Paul, taking as an example the question raised here, if you developed a system and you look down the road over a number of years, it would seem like the end result would be that during the low flow time of the year, I could envision a situation such that the instream water quality criteria could conceivably be very close to the chronic toxicity value and it seems like there is a time element there as well to which the water quality criteria envisioned pending your toxicity numbers are very close to the chronic and acute values over a period of time. Conceivably you could have it for one, two or three months out of the year where it has the instream concentrations being just a little bit less than the water quality criteria and it seems to me that is a situation we need to think about long and hard before we get too far down the road here. I don't recall off hand the extent to which those sort of situations were envisioned when the criteria were developed. We are typically now looking at a spike where acute is one day in three years and then a little longer spike could be caught at four days once in three years. Now if we get into a situation where we have a river approaching a chronic toxicity value for weeks or months for some of these treatment plants, it seems that we have a much different sort of standards to consider here **biologic to the stream**.

Answer: Paul – I don't know. I don't know enough about how the aquatic criteria developed. In the analog for humans, you have the no adverse effect level in which you can for long periods of time stay below the no adverse effect level and you are fine. But I don't know if that is true for chronic criteria or not. I suspect it may be.

Comment: Carl Paulsen – I need to think about this idea a lot more because I really don't feel that I understand it enough, but my understanding of setting these values at capacity is that you are going to be setting a certain treatment level for a certain flow of water so you have this buffer where as you start treating more water you are still within your goals for clean water. What I don't understand how some of these ideas would deal with what happens when you start treating water, and how do you make adjustments to your operations, whatever they are, to then still be

meeting ultimately our water quality goals. Perhaps, I don't understand quite how the permitting works. If someone could explain that, not necessary now, but I am unclear how that handles changes over time. I would like to see sort of discussion on that at some point.

Comment: Paul – I think there is in fact, correct me if I am wrong George, there is a difference between industrial and municipal in that regards. Municipals have to build the plant to be able to treat the design flow to meet the permit limits. Industrial permits just limit what comes out of the pipe. We don't in the permit process look inward into the treatment process in an industrial permit, they just have to meet their permit limits at the end of the pipe and those are set using water quality standards or best available technology which ever is more stringent.

Comment: - **Andrew Serell - Water Quality Standards.** There is a very detailed EPA guidance document about how the water quality standards are developed, but it is worth looking at to try and answer that question. My recollection of it is that water quality standards are developed at extremely protective levels. In other words, it is an assumption that above this level everything dies and below this level everything is okay. Numerous levels of protection built into it. So when you combine the water quality standards with the EPA criteria that they had better not be exceeded more than 3 days every three years, it applies a significant level of protection so that if you are discharging right at your permit limits during the low flow situation, that is supposed to be protective of the instream organisms and as a practical matter you are not discharging at your permit limit during low flow situations for months at a time because 7Q10 conditions by definition just don't exist for three months at a time.

Comment: Paul – If we move away from the steady state assumption - we move away from 7Q10 - it ceases to have any meaning. 7Q10, I am not sure what the origin of it is, but it is used and is widely accepted as a surrogate for those time criteria. Once we are talking about meeting the time criteria themselves, we do not need to talk about 7Q10 any more because it is not a statistic that has any application or meaning.

Comment: **George Berlandi** - EPA came out with a dynamic model that basically tells you if you take a gauge, and if you go through the gauge and find out if you want one exceedence every three years, etc. it will actually calculate the flow now in what we call the biological flow. We can compare that flow with the 7Q10 flow and we have 60 gauges in New Hampshire. We have found that the 7Q10 flow is higher than the 1B3 flow. It is not as protective as we all thought. Even with dynamic modeling, if the data that we have is showing right, if you try to do a dynamic model for a toxic, that the probability is the number is going to come up more stringent that it would have been using this 7Q10 flow.

Comment: **Andrew Serell** - I don't agree that when you throw in the plant design flow - when you throw in the fact that it is being modeled with plant design flow. You can use the 7Q10 with a plant design flow; you are being extremely conservative because the practicality is that there is no plant in this state or country that discharges near the design flow during low flow conditions. So that is where the old protection is built in. There may be situations where the 7Q10 flow is higher than the 1B3 flow. If you look at the design flow and you say okay on the average the facility is 50% or 60% of the design flow and that is pretty standard in this state. If you say okay that is a factor of 2 and then you look at the difference between the 7Q10 flow and these 1B3 reporting flows, that is a factor of 3, 4 or 5 sometimes. What we are looking at is something that has surprised a lot of people including ourselves. That was part of the reason why we are looking at the 1Q10 because the 1Q10 makes what we were doing way off base. The dynamic modeling may or may not give people what they think they want. The 7Q10 flow is non-protective because of the 1B3 flow being lower than the dynamic modeling.

Comment: If we move in this direction and take the 7Q10 out of criteria off the table, then we need to define what flow we are talking about. Is this the rate of flow recordable for a single day

in a 12-hour period? There needs to be some kind of criteria that we agree to as to what that fundamental basis is.

Comment: Ron Rayner - Paul I thought that the discussion today relative to the multiple iterations in steady state models, up to a certain point, because of perhaps the somewhat discomfort and uncertainties associated with this dynamic modeling.(this is missing a concluding statement) Obviously we are not as familiar with it from a technological standpoint as we are steady state models. I always thought that we would do that and then it would trigger at some point in time where the effective discharge or we would have to go to dynamic modeling or they would have to upgrade treatment because they might have a violation a fair number of times.

Answer: Paul – The modeling is always predictive. You always do the modeling based on a future situation of plant design flow and design loading.

Comment: Ron -What we spoke about earlier doing the multiple sets of models, to me, is your approach exceeding the acute and chronic limits that then the discharger shall either be obliged to initiate some planning process to begin the upgrade or we shall go to the more expensive route of performing dynamic modeling. That may entail putting on stream gauge in the upstream of the discharge point.

Comment: Paul – The modeling always occurs in the predicted mode. There is a planning process that is initiated for municipalities anyway at 80% of design capacity and that is usually hydraulic factors, I think. The modeling is solely for the purpose of setting the permit limits. Determining what flows and concentrations can be discharged that will meet water quality standards. I think dynamic modeling has just two ways of doing it. You can assume steady state or you cannot assume steady state in which case you are doing some kind of a time varying scenario.

Comment: Ron –I use it as a check and balance where perhaps the permit limits are issued on a steady state basis, you could have an alternative clause in the permit, where when you get to a certain state, that shall initiate a planning process by the applicant or dynamic modeling. At least they will know that at the time of issuance that we are planning for it. Yes, predictive. Yes, prospectively I concur. Why go to that step right away.

Comment: Paul – I think that would be the option of the applicant. Our idea is that you can always do what we have done historically, but there is now another option which allows time varying flows in concentrations. It takes into account time varying flow in the river and allows time varying flows in concentrations in the discharge.

Comment: Ron – The applicant can suggest that.

Comment: Paul – There are two scenarios. One in which the time varying properties of the discharge are under the control of the permittee. There are others in which they are statistical and not necessarily under the control of the permittee. Either way, you have a time varying scenario for modeling.

Question: Marjory – I have a question of Vern. Why are you concerned that discharges be close to the limit? It seems to me you have a limit because you don't want them more than that. If you say you cannot discharge more than that, if you discharge less, I don't see it.

Answer: Vern – *Here is what the point of the issue is.* Lets assume that you have an instream concentration of say 4 parts per billion. That is the water flow criteria. Lets assume that you are currently not meeting limits, but if you were meeting limits, you would only be allowed to exceed, assuming that 4 parts per billion is prime standard, you would only be allowed to exceed that for four consecutive days once in three years. Typically it is based on steady state assuming that most of the time stream flow would be well above 7 and your instream concentration would be well away from the prime flows. The process that they are describing here, you could start out with a situation where you would have an instream limit that would approach 5 parts per

billion, a week during the summer. **Comment: Paul** – If your standard is four you have to be less than four. **Answer: Vern** – Assume it would be 3 parts per billion for a week during the summer, and that as your capacity grows using this process of magic flows and treatment point flows and stream flow, you would be at 3 parts per billion for 30 days. The way these criteria are evolved, based on short-term toxicity tests, not life cycle tests. Stream resources, 30 days may very well be a whole life cycle. That is where the issue is coming up. The criteria that we have now are one day in three years for the acute and four days in three years for chronic criteria are measured in spikes for toxicity as opposed to meeting really close to that **flat four** for the instream concentration for long periods of time. That is our concern right now.

Very difficult to hear and translate the above section.

Comment: Paul – We will answer that question. I don't know the answer and it is a question of how the standard is derived. I do know the answer for human health and sediment, because we have recently done the sediment policy. In both those cases the numbers that are used are such that the chronic level, the lower level, there is no impact on the organism. The organism can live a healthy and happy life whether it is a human or a sediment dwelling organism at the lower level of concentration even if that lower level exists for the whole life cycle of the organism.

Comment: Vern – There are two points. Number one, those are national criteria and the way it is set up, except for humans, the target is to protect 90% of the species. If you are talking about something like copper, it turns out that fresh water mussels are one of the more sensitive species to copper discharges and they are not adequately protected under that 90% rule. We have a list of species here in New England; we have some here in New Hampshire that are on the endangered list. That is an issue that we are very, very concerned about.

Answer: Paul – I think that is a separate issue. You say what if we have an organism that we know is not protected by the standard, and I think we would have to answer that question in the context that we know the organism is in the stream that is impacted by the discharge. You would have to answer that question relative to the specifics of that case and not relative to the national standard. The presumption, for better or for worse, is that the national standard is protective. We are coming closer into sync with the EPA National Guidance if we do this rule change. Which is old guidance it is not new.

Comment: Marjory – So your concern is not with our wanting to exceed this standard percent. It just seemed to me Vern when you were arguing before, that if the standard is whatever it is, that it ought to be okay to discharge 3 parts per billion no matter how we do it. If that is not true, then maybe the standard ought to be different.

Answer: Paul – *We can check on how the standards have done generically and come back with a response on that.*

Comment: John Hodsdon – The two of you have just opened up a lot of questions in my mind on why using the 4 day interval and toxicity and such. Lets take copper as an example. It is an essential nutrient and we all need it; however, apparently the chronic toxicity value is somewhere around 5 or a little more times what the recommended daily allowance is. There is no wide margin in there as there is with some other nutrients. However, there is also the case that humans store copper and this would seem to be something that you could average out over time. Something you cannot do with vitamin C but you can certainly do with copper. I know I do it with vitamin D where I build up my vitamin D in my liver in the summer and about this time of year it is getting sort of depleted and I need to start taking a few supplements. On this 4 days at least as far as the human species is concerned, the copper might be something that we should use for a lot longer period. I had no idea that rock ridge mussel was especially susceptible to copper. Plants are susceptible to excess copper and maybe this water that is going down there packed

with pollution is fine for drinking but may not be too good for irrigation or watering houseplants with it. I am wondering to what extent this has been taken into consideration and setting a level.

Answer: Paul – The standard for copper is based on aquatic life and I believe it is based on animal (invertebrates) and it is a valid question for aquatic life. Aquatic life does include plants. If a plant organism were more sensitive than the animal organism, it would be appropriate to revise the standard. The human health standards are substantially greater than aquatic life.

Comment: Andrew Serell – By way of an example I think that drinking water in Rochester has more copper in it than allowable for the aquatic life criteria stuff.

Comment: Paul – That is true. Copper tastes bad long before it is toxic.

Comment: Andrew – For any individual criteria, I think the State has adopted the EPA Federal criteria for numeric toxic pollutants. The State doesn't have to; it can set its own criteria for any individual pollutant. For any criteria that there is any question about, are we protective enough, are we using the right species. Number 1 it can be addressed at the EPA level, but the State can do it to. That is a whole different issue from what I think is being discussed here. Whether the water quality standard, whatever it is, is protective enough needs to be addressed on a toxic pollutant basis and there is a mechanism for doing this. I think what we are talking about here is how to determine what permit limits linking to a permit to ensure that those water quality standards are met. I think there are only two differences.

Comment: Paul – I think verbatim we have adopted the EPA criteria for toxics. We do not do our own analysis.

Comment: John Hodsdon – You might want to keep in mind that EPA has a history of being very conservative and as new information is developed, it appears that they do not have to be as conservative. They are very slow to respond. Going the other way, I guess they respond fairly rapidly. It may be something that rather than having rules that get excessively protective and require large expenditure of money to achieve that level that those that would be expending this large amount of money to achieve this lower level of copper or whatever, could review some of the scientific literature in recent decades and it might be that it would be proper to set some different rules. We have to be able to justify and from what I have heard more recently, it looks like it is the aquatic bird waste and not humans that are what is really controlling the **white** waters.

Comment: George – **Tom** (no Tom was present at the meeting), the water quality standards right now allow for facilities to do their own site specific testing and criteria. So there is a varying of the standards now that says before you go out and spend millions of dollars, you may want to look at the number and copper always comes to mind, and re-look at the number. Do your own site specific test and find out if the copper criteria is actually appropriate for your water quality site where you discharge.

Comment: Paul – I think for Connecticut, it was kind of like a generic site specific study. The primary issue, again speaking of copper, was that in streams that had high organic matter, the availability of copper to the most sensitive organisms goes down substantially because the copper is complexed with organic molecules and is not biologically available.

Comment: Ron Rayner – That is correct. It has to do with bioavailability or lack of it when there is organic matter present because it tends to tie up.

Comment: Paul - That is in general true of metal ions, I believe. I believe that metal ions tend to complex with organics.

Comment: John Hodsdon – Maybe you should just say that this body would look favorably on reasonable proposals to deviate from what EPA has been inadequately supporting.

Comment: Paul – That is in the rules already. There is a process for that which is actually an EPA process that we have adopted for site specific permit limits. The Connecticut study,

Connecticut did it not for just one site, but for sites on a regional basis where certain conditions existed.

Question: Andrew Serell – Is there a reason for using 1Q10 as opposed to something like 1B3, and is there not enough data to develop 1B3, or why would you even want to use 1Q10 for developing acute criteria as opposed to 1B3 or something else?

Answer: George – Historically what we did on the 1B3 in the TST was in 1991; the TST council said 7Q10 or 1Q10 approximates the flow curve. Actually what we did is compare the 1Q10 with the 1B3 which was pretty close. Closer than the L.

Comment: Paul – I guess maybe we could move on to suggestions for continuing the dialogue on this. *Things that I had noted that we need to provide more information on are:*

1. *What the national process is for developing toxic standards in order to answer Vern's question.*
2. *Is a national developed standard in general protective of aquatic life?*
3. *Uncertainty on how the new use of the 1Q10 standard will play. Can we provide information on that George? Can we run some 1Q10 scenarios, or have we run some that we could make public?*

Comment: George – The problem with the 1Q10 is we can calculate 1Q10 on all gauges in NH, but we don't have the vehicle to calculate a 1Q10 on something that is not gauged. When we did the 7Q10 years ago, we had come up with a regression equation which we used to calculate the 7Q10 anywhere other than gauged. Right now we do not have that same datum on the 1Q10.

Comment: Paul – Could it be useful to look at and show people the 1Q10s and the 7Q10s from the gauged locations.

Comment: George – *For the next meeting I can show you what we have and the correlations. We were actually trying to find out if there was a correlation overall in the state between the 7Q10 and the 1Q10.*

Comment: Jim Fitch – I can offer some experience in Maine on what they tend to do there in areas where they do not have a gauge and they are looking for 7Q10. They will look to what they judge to be rivers of similar character that have a gauge and do it on a square mile basis. The other thing that they do is in areas where they don't have the data to define 1Q10 yet they do have a 7Q10 that they have translated. They use $\frac{1}{4}$ of 7Q10 as 1Q10. So maybe your analysis of the data would show.

Comment: George – That will be interesting to see what our analysis shows. We look at the 1Q10 versus the 1B3 and the 7Q10 versus 4. I really never looked at all of them, the 1Q10 versus 7 to see what the equations are.

Comment: Marjory – Bob said the alternative site specific criteria is in section 1704 in the water quality regs.

Other Business

Anthony Zuena – *Just a request that the workshop you have set up with those suppliers that have existing transfers, that the Town of Salem be invited to that meeting. Paul Currier* – *Yes, the meeting, it will be existing and a couple of other communities that are thinking about transfer. So, yes we will definitely include you.*

Bob Estabrook – We sent around a signup sheet and one of the columns is e-mail if new. Most people did not fill it out, because we already have your e-mail address. If there is anybody here that this is the first time you have come to a meeting, you probably do not have your e-mail

address. If you want to be notified of future meetings, you can put it down and we will add it to our list of addresses.

James Donison – I have one question. **Dynamic Modeling versus Flow based permits.** The Town of Jaffrey for example was looking at having different flows for different fluid levels. That would be a little bit different than dynamic modeling. This discussion paper that is presented here, that would be a different type of discussion paper?

Answer: Paul – I think that Jaffrey fits within what we are talking about here. I think that Jaffrey is talking about time varying flows but the series of time varying flows. I think that the rule change language that we proposed would accommodate that. You have control over how you vary your flow. You don't have control over the concentrations but you can have enough information about that so that you can do some estimates on it.

Future Meeting Date and Times

Tuesday, September 9, 2003 1:30 pm – 4:00 pm at NHDES, 6 Hazen Drive, Rooms 110 and 111.

The meeting adjourned at 3:45 PM